

CLAIMS

We claim:

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1. A method for modifying data from a group of laboratory instruments, the method comprising:
 - obtaining data indicative of testing specimen outputs of the group of laboratory instruments; and
 - normalizing the data according to a control group.
 2. The method as recited in claim 1, wherein the obtaining step includes receiving the group of laboratory instrument outputs via a network communications link.
 3. The method as recited in claim 2, wherein the network communications link is an Internet web-site interface.
 4. The method as recited in claim 1, wherein the obtaining step includes receiving the group of laboratory instrument outputs via a manual input.
 5. The method as recited in claim 1, wherein the normalization step includes obtaining control specimen data and generating a normalization curve according to the control specimen data.

6. The method as recited in claim 5, wherein the normalization curve is generated by applying a linear regression to the group of laboratory instrumentation control specimen data.

7. The method as recited in claim 5, wherein the normalization curve is generated by applying a nonlinear regression to the group of laboratory instrumentation control specimen data.

8. The method as recited in claim 5, wherein the normalization curve is generated by applying a spline to the group of laboratory instrumentation control specimen data.

9. The method as recited in claim 5, wherein the normalization curve is generated by applying a linear regression, a non-linear regression, and a spline to the group of laboratory instrument control specimen data and measuring the curve error for each curve.

10. The method as recited in claim 9 further comprising returning the curve with the minimum cumulative curve error as the normalization curve.

11. The method as recited in claim 9 further comprising returning the curve with the minimum average curve error as the normalization curve.

12. The method as recited in claim 5, wherein the normalization step includes mapping the testing specimen group output according to the normalization curve.

13. The method as recited in claim 5, wherein the normalization step includes generating a normalization curve for each laboratory instrument in the group of laboratory instruments.

14. The method as recited in claim 1, wherein the control group comprises data indicative of laboratory instrumentation outputs from one or more groups of laboratory instruments.

15. The method as recited in claim 1, wherein the control group comprises data indicative of a comparison group of laboratory instruments.

16. The method as recited in claim 1 further comprising outputting the normalized data.

17. The method as recited in claim 13, wherein the outputting step includes displaying the normalized data on a network.

18. The method as recited in claim 13, wherein the outputting step includes sending the normalized data to the group of laboratory instruments.

19. A computer-readable medium having computer-executable instructions for performing the steps recited in claim 1.

20. A computer system having a memory, an operating system and a central processor, the computer system operable to execute the steps recited in claim 1.

21. A method for modifying data from two or more groups of laboratory instruments, the method comprising:

obtaining testing specimen outputs from a first of the two or more groups of laboratory instruments;

obtaining testing specimen outputs from a second of the two or more groups of laboratory instruments; and

normalizing the testing specimen outputs from the first and second groups of laboratory instruments.

22. The method as recited in claim 20, wherein at least one of the obtaining steps includes receiving data via a network communications link.

23. The method as recited in claim 21, wherein the communications link is an Internet web-site interface.

24. The method as recited in claim 21, wherein at least one of the obtaining steps includes receiving data via manual input.

24.15 The method as recited in claim 21, wherein the normalization step includes obtaining control specimen data from the first and second groups of laboratory instruments and generating a normalization curve according the control specimen data.

25.26 The method as recited in claim ²⁵24, wherein the normalization curve is generated by applying a linear regression to the first and second groups instrumentation control specimen outputs.

26.27 The method as recited in claim ²⁵24, wherein the normalization curve is generated by applying a nonlinear regression to the first and second groups of instrumentation control specimen outputs.

27.28 The method as recited in claim ²⁵24, wherein the normalization curve is generated by applying a linear regression, a non-linear regression, and a spline to the group of laboratory instrument control specimen data and measuring the curve error for each curve.

28.29 The method as recited in claim ²⁸27 further comprising returning the curve with the minimum cumulative curve error.

29.30 The method as recited in claim ²⁸27 further comprising returning the curve with the minimum average curve error.

30. ³¹ The method as recited in claim ²⁵ 24, wherein the normalization step includes applying a spline to the first and second groups of instrumentation control specimen outputs.

31. ³² The method as recited in claim ²⁵ 24, wherein the normalization step includes mapping the testing group output of the first group of laboratory instruments according to the normalization curve.

32. ³³ The method as recited in claim ²⁵ 24, wherein the normalization step includes mapping the testing group of the second group of laboratory instruments according to the normalization curve.

33. ³⁴ The method as recited in claim ²¹ 21, wherein the normalization step includes normalizing the first group testing specimen output with the second group testing specimen output.

34. ³⁵ The method as recited in claim ²¹ 21, wherein the normalization step includes normalizing the first and second group testing specimen outputs to a control group indicative of a peer group of laboratory instrument outputs.

35. ³⁶ The method as recited in claim ²¹ 21 further comprising outputting at least one of the normalized first and second group outputs.

36. ³⁷ The method as recited in claim ³⁶ 35, wherein the outputting step includes displaying the normalized outputs on a network.

37.³⁸ The method as recited in claim ³⁶35, wherein the outputting step includes sending the normalized outputs to at least one of the first and second laboratory instrument groups.

38.³⁹ A computer-readable medium having computer-executable instructions for performing the steps recited in claim 21.

39.⁴⁰ A computer system having a memory, an operating system and a central processor, the computer system being operable to execute the steps recited in claim 21.

40.⁴¹ A system for normalizing groups of laboratory instruments, the system comprising:

one or more groups of laboratory instruments; and

a normalization server in communication with the groups of laboratory instruments;

wherein the groups of laboratory instruments send data indicative of outputs to the normalization system and wherein the normalization system outputs normalized outputs to the groups of laboratory instruments.

41.⁴² The system as recited in claim ⁴¹40, wherein the normalization server and the one or more groups of laboratory instruments communicate via a network communications link.

42.⁴³ The system as recited in claim ⁴²41, wherein the communications link is an Internet web-site interface.

43. The system as recited in claim 40, wherein one or more groups of laboratory instruments include a laboratory information system coupled to individual laboratory instruments and in communication with the normalization server.

44. A method for standardizing instrument results from a plurality of laboratory instruments, the method comprising:

obtaining testing specimen data from a first of a group of laboratory instruments;

normalizing the first laboratory instrument testing specimen data according to a first normalization curve; and

adjusting the first laboratory instrument data according to the first normalization curve.

45. The method as recited in claim 44, further comprising:

obtaining testing specimen data from a second of a group of laboratory instruments;

normalizing the second laboratory instrument testing specimen data according to a second normalization curve; and

adjusting the second laboratory instrument data according to the second normalization curve.

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46. The method as recited in claim ⁴⁶~~45~~, wherein the normalization steps include obtaining control specimen data from the first and second laboratory instruments and generating the first and second normalization curves according to the control specimen data.

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47. The method as recited in claim ⁴⁷~~46~~, wherein the first and second normalization curves are generated by applying a nonlinear regression to the control specimen data.

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48. The method as recited in claim ⁴⁷~~46~~, wherein the first and second normalization curves are generated by applying a spline to the control specimen data.

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49. The method as recited in claim ⁴⁷~~46~~, wherein the first and second normalization curves are generated by applying a linear regression, a non-linear regression, and a spline to the first and second control specimen data and measuring the curve error for each curve.

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50. The method as recited in claim ⁵⁰~~49~~ further comprising returning the curve with the minimum cumulative curve error.

⁵²
51. The method as recited in claim ⁵⁰~~49~~ further comprising returning the curve with the minimum average curve error.

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52. The method as recited in claim ⁴⁷~~46~~, wherein the first normalization step includes mapping the testing sample data according the first normalization curve and the second

normalization step includes mapping the testing sample data according to the second normalization curve.

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53. ⁵⁴ A computer-readable medium having computer-executable instructions for performing the steps recited in claim ~~44~~. ⁴⁵

54. ⁵⁵ A computer system having a memory, an operating system and a central processor, the computer system being operable to execute the steps recited in claim ~~44~~. ⁴⁵

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